LA CROSSE, WIS.

Due solely to melting of an unusually heavy snow cover in the headwaters of the Black, Chippewa, and Mississippi Rivers, floods reaching bankful or slightly over developed in this district the first 2 weeks in April. Abnormal temperatures in the latter part of March caused the smaller tributaries such as the Root, Zumbro, Whitewater, lower Black, and Trempleau Rivers in the southern end of the district to clear their flood waters first. This was followed by flooding in the Black and Chippewa the first 3 days in April. Alternate periods of mild and freezing temperatures resulted in a slow recession in the Chippewa River so that a large volume of water from this stream met and augmented an unusually large flow of melting snow water from above St. Paul from the 5th to 10th of April. Near flood stages were reached in the upper section of the main channel from Hastings to Lake Pepin, slightly under from Dam No. 4 to 5, and flood stage or slightly above from Dam No. 5A to Dam No. 8. The Mississippi crested at La Crosse 4 p. m. of the 12th, with a stage of 12.32 feet, and at Winona, Minn., a crest of 13.63 feet at 7 a. m. of the 11th. The lower Black crested at Galesville, Wis., with a peak of 12.8 feet 4 p. m. of the 2d, and the Chippewa at Durand, Wis., 12.8 feet at 7 a. m. of the 3d. The nature of flooding was not severe and coming at this time of the year when spring freshets are normally expected and when little or no agricultural loss is anticipated, the damages were comparatively slight. It may be stated that no effective precipitation occurred during the melting snow period, a fortunate circumstance which prevented higher crest stages. Over the entire drainage area, the percentage of run-off from potential snow cover moisture is estimated as 21 percent. The instantaneous peak discharge at La Crosse was about 113,500 c. f. s.

Damages were relatively small and confined for the most part to summer homes and cottages in the bottom lands. In the Black River, some damage occurred to a bridge construction project in the McGilvary bottoms on the highway leading to Trempleau. Agricultural damage was insignificant, mostly siltation of pasture land in the Black River Valley. There was little loss by erosion due to the extended and slow run-off. Railroad beds were in danger in some low places on both banks of the Mississippi by undercutting of wave action by strong winds over the pools. Road beds have been riprapped and reinforced so that flood levels would have to exceed at least 1 foot above the flood to produce serious damage. About 12 families had to vacate their homes temporarily in the vicinity of La Crosse. Seepage in basements occurred in low places in La Crosse, Winona, and Wabasha. Seepage into the sewer system in Winona, Minn., during the high water introduces a serious problem of continual pumping.

Damages in the La Crosse district have been estimated at approximately $8,500.

DUBUQUE, IOWA

Floods which occurred during this period were mostly light or moderate, and actual flood stages were recorded only at Portage and Muscoda on the Wisconsin, and Dubuque on the Mississippi.

The flood was unusual in that the spring rainfall apparently made only incidental contributions to the major rise. It resulted largely from the fact that a high ground water level was established in the autumn of 1942 throughout most of the upper Mississippi Valley States, and the additional fact that a heavy snow cover persisted throughout the winter over the upper valleys. In the lower reaches of the district, substantial portions of the snow cover melted shortly after the middle of February, but over the upper drainage areas the early season mild temperatures had but little effect upon the snow, other than to reduce it to ice or at least to a more compact state. Much of the rise originated above Lansing on the Mississippi and above the Dells of the Wisconsin. It began during the last few days of March.

Losses along the Wisconsin River were mostly in damages to fences, etc., with an aggregate monetary value of loss or cost of repairs of $1,400. Some pasture lands in the Mississippi Valley were flooded which delayed the use of them to some extent. Damage or loss to tangible property amounted to $38,700.00, most of which was the cost of repairs to railroad roadbeds. Many basements were reported flooded, mainly by seepage, but losses were light.

The heaviest loss reported was in the suspension of business during the high water.

Missouri Basin.—Moderate rains on April 10–11 caused light flooding at a few points along the Solomon and Republican Rivers. About 4,000 acres of crops in Osborne and Mitchell Counties, Kans., were flooded with losses estimated at $15,000. Additional losses to bridges and highways were estimated at $1,000. Only light damage resulted in the Republican Basin.

A rather severe flood occurred in the upper Missouri River Basin, resulting almost entirely from the melting of a heavy snow cover. The principal flood contributor was the Yellowstone River, with substantial contributions from small tributaries in the Dakotas, such as the Little Missouri, Heart, Cannonball, James, and Cheyenne Rivers. Between Bismarck and St. Joseph, the flood in the Missouri developed into a flood comparable to that which occurred in 1881. At Nebraska City, Nebr., the Missouri reached a stage higher than the previous maximum stage of record in 1881. Serious flooding did not occur at and below Kansas City, Mo. The most serious damage, probably was in the vicinity of Omaha, Nebr. A complete report of this flood and the damage caused by it is in the process of preparation and will be published in a later issue of the REVIEW.

Ohio Basin.—Moderate rains were general over the Ohio Basin April 13–20. There was a gradual increase in stream flow during this period but flood stages were not exceeded generally in the upper portion of the basin. Rainfall over the Green River Valley from the 10th to the 19th averaged 6.91 inches and over the Ohio Valley in the vicinity of Evansville, Ind., 8.86 inches. The Ohio River reached stages slightly above flood stage at most stations below Tell City, Ind. No damage was reported.

Flood stages were exceeded slightly at a few widely scattered stations in the White, Arkansas, Red, and Lower Mississippi River Basins. Losses were light being confined mostly to delay in farm work and to the suspension of business.

West Gulf of Mexico Drainage.—Heavy local thundershowers over the upper Trinity River Basin on April 8 caused a sharp rise in the upper Trinity and its tributaries. Overflow was light and no loss or damage was reported.

Gulf of California Drainage.—Water from melting snow caused the Gunnison River at Delta, Colo., to rise slightly above flood stage from April 24 to 27, and again on April 29, and it continued above flood stage at the beginning of May.

Pacific Slope Drainage.—Storms from March 30 to April 1 produced high run-off from northern Williamette tributaries draining the Coast Range. This run-off, augmented by water from melting snow, caused some flooding in Oregon and at Vancouver, Wash.

FLOOD-STAGE REPORT FOR APRIL 1943

[All dates in April unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
HUDSON BAY DRAINAGE					
Red of the North:	*Feet*			*Feet*	
Wahpeton, N. Dak.	6	Mar. 31	8	10.7	2
Moorhead, Minn.	17	Mar. 31	18	34.3	7
Grand Forks, N. Dak.	25	4	20	33.3	13
ATLANTIC SLOPE DRAINAGE					
Connecticut:					
South Newbury, Vt.	18	26	30	19.9	29
Hartford, Conn.	16	28	May 2	17.9	30
Chenango:					
Sherburne, N. Y.	8	20	20	7.97	20
Greene, N. Y.	8	20	20	8.0	20
Chemung: Chemung, N. Y.	12	20	22	13.96	22
Susquehanna:					
Oneonta, N. Y.	12	21	26	12.63	26
		28	29	12.16	28
Vestal, N. Y.	14	20	22	15.07	20
Little Juanita: Spruce Creek, Pa.	7	19	19	7.3	19

FLOOD-STAGE REPORT FOR APRIL 1943—Continued

[All dates in April unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE—Con.					
James:	*Feet*			*Feet*	
Columbia, Va.	10	Mar. 20	May 24	18.7	21
State Farm, Va.	12	21	22	[2] 12.4	22
Dan: Danville, Va.	11	20	20	11.8	20
Roanoke:					
Randolph, Va.	21	20	21	22.9	21
Weldon, N. C.	31	21	24	37.7	23
Williamston, N. C.	10	Mar. 23	5	11.0	Mar. 28–Apr. 1
		24	(1)	11.1	28–29
Neuse:					
Neuse, N. C.	14	21	23	15.4	22
Smithfield, N. C.	13	21	24	14.8	23
Haw: Moncure, N. C.	20	20	20	20.9	20
Cape Fear: Fayetteville, N. C.	35	21	21	35.3	21
Lock No. 2, Elizabethtown, N. C.	20	20	24	27.5	22
Pee Dee:					
Mars Bluff Bridge, S. C.	17	22	28	19.0	25
Poston, S. C.	18	28	28	18.0	28
Saluda: Pelzer, S. C.	6	19	22	7.0	20
Broad:					
Blairs, S. C.	14	20	21	15.4	20
Carlton Bridge, Ga.	15	20	20	16.2	20
Savannah:					
Butler Creek, Ga.	21	20	21	22.2	21
Burtons Ferry, Ga.	15	Mar. 23	1	20.4	Mar. 26
		24	(1)	17.4	25
Clyo, Ga.	11	Mar. 11	10	18.5	Mar. 29
		25	(1)	14.8	29–30
Ogeechee: Dover, Ga.	7	Mar. 11	4	9.3	Mar. 29
Ocmulgee:					
Abbeville, Ga.	11	Mar. 22	2	16.7	Mar. 27
Lumber City, Ga.	15	Mar. 28	2	17.7	Mar. 31
Oconee: Mount Vernon, Ga.	16	Mar. 25	1	19.1	Mar. 28
Altamaha:					
Charlotte, Ga.	12	Mar. 22	8	22.0	Mar. 30
Everett City, Ga.	10	Mar. 29	10	13.0	4
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	Mar. 5	10	23.5	Mar. 27
		22	(1)	17.3	25–26
Coosa: Gadsden, Ala.	20	20	23	20.9	21
Cahaba: Centerville, Ala.	23	19	20	28.0	19
Black Warrior:					
Lock No. 10, Tuscaloosa, Ala.	47	19	20	48.8	20
Lock No. 7, Eutaw, Ala.	35	20	24	39.0	22
Tombigbee: Lock No. 3, Whitfield, Ala.					23
Pearl:					
Jackson, Miss.	18	10	16	20.2	14
Monticello, Miss.	15	9	13	18.7	11
Columbia, Miss.	17	3	3	17.0	3
		10	14	18.9	12
Pearl River, La.	12	Mar. 20	25	17.3	Mar. 24
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Chippewa: Durand, Wis.	11	2	5	12.8	3
Black: Galesville, Wis.	12	2	2	12.8	2
Wisconsin: Portage, Wis.	17	3	6	18.0	5
Rock: Moline, Ill.	10	Mar. 15	12	13.4	Mar. 20–21
Illinois:					
Morris, Ill.	13	27	29	14.9	28
Peru, Ill.	17	28	30	18.2	28
Mississippi:					
Fort Ripley, Minn.	10	3	7	[1] 12.0	4
Minneapolis, Minn.	16	5	7	17.0	7
St. Paul, Minn.	14	6	9	14.5	7
Winona, Minn.	13	8	15	13.6	11–13
La Crosse, Wis.	12	10	15	12.3	12–13
Dubuque, Iowa.	18	13	17	18.2	16
Clinton, Iowa.	16	13	21	16.8	17
Muscatine, Iowa.	15	12	24	16.2	17–18
Keithsburg, Ill.	12	14	23	12.5	16–20
Keokuk, Iowa.	12	12	(1)	13.8	18
Quincy, Ill.	14	12	(1)	15.4	18–22
				15.4	29
Hannibal, Mo.	13	6	6	13.0	6
		10	(1)	15.6	19–20
				15.7	29
Louisiana, Mo.	12	6	6	12.1	6
		11	(1)	13.8	19–22
				13.9	
Missouri Basin					
Solomon: Beloit, Kans.	18	12	14	24.0	14
Republican:					
Guide Rock, Nebr.	10	12	12	10.5	12
Concordia, Kans.	8	12	12	8.2	12
Clay Center, Kans.	15	12	13	15.9	13

See footnotes at end of table.

FLOOD-STAGE REPORT FOR APRIL 1943—Continued

[All dates in April unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
Missouri Basin—Continued					
	Feet			*Feet*	
Grand: Brunswick, Mo.	12	Mar. 15	May 22	13.5	21
Missouri:					
Elbowoods, N. Dak.	17	Mar. 27	2	20.8	Mar. 31
Bismarck, N. Dak.	19	Mar. 31	4	23.2	1
Mobridge, S. Dak.	16	3	6	19.0	5
Pierre, S. Dak.	15	2	8	19.6	6
Geddes, S. Dak.	12	1	10	17.5	8
Yankton, S. Dak.	12	7	10	13.6	9
Blair, Nebr.	18	4	14	21.4	12
Omaha, Nebr.	19	8	15	22.45	13
Nebraska City, Nebr.	15	4	17	19.8	14
St. Joseph, Mo.	17	14	19	18.2	18
Lexington, Mo.	22	19	20	22.3	20
Ohio Basin					
Allegheny: Olean, N. Y.	10	21	22	10.5	21
Little Kanawha: Creston, W. Va.	20	20	20	20.0	20
Kentucky:					
Jackson, Ky.	29	20	20	28.2	20
Lock No. 9, Valley View, Ky.	20	20	22	23.0	20
Cumberland:					
Celina, Tenn.	28	21	25	32.5	22
New River, Tenn.	18	19	19	18.0	19
Ohio:					
Dam No. 7, Midland, Pa.	30	20	21	31.2	20
Pont Pleasant, W. Va.	40	20	22	41.5	21
Dam No. 29, Ashland, Ky.	51	21	22	52.1	21
Tell City, Ind.	38	25	28	38.9	26
Dam No. 47, Newburgh, Ind.	38	24	30	41.4	27
Evansville, Ind.	37	25	30	38.8	28
Mt. Vernon, Ind.	35	26	30	36.8	29
Shawneetown Ill.	33	26	May 2	36.6	29
Dam No. 50, Fords Ferry, Ky.	34	25	May 2	38.5	29–30
Dam No. 52, Brookport, Ill.	37	28	May 1	37.7	30
Dam No. 53, Grand Chain, Ill.	42	27	May 2	43.8	30
Cairo, Ill.	40	25	May 4	42.8	30
White Basin					
White: St. Charles, Ark.	25	9	10	25.0	9–10
Arkansas Basin					
Petit Jean: Danville, Ark.	20	12	14	21.5	13
Red Basin					
Little Missouri: Boughton, Ark.	20	18	20	21.8	19
Ouachita:					
Arkadelphia, Ark.	17	18	19	18.5	19
Camden, Ark.	26	Mar. 28	2	28.3	Mar. 31
		20	26	31.4	23
Sulphur:					
Hagansport, Tex.	36	9	10	36.6	10
Naples, Tex.	22	Mar. 31	4	23.6	2
Lower Mississippi Basin					
St. Francis: Fisk, Mo.	20	26	26	20.0	26–27
Tallahatchie: Swan Lake, Miss.	26	Mar. 16	5	29.0	Mar. 21–22
WEST GULF OF MEXICO DRAINAGE					
Elm Fork of Trinity: Carrollton, Tex.	6	8	8	6.5	8
East Fork of Trinity: Rockwall, Tex.	10	9	12	13.4	10
Trinity:					
Dallas, Tex.	28	9	10	30.6	9
Trinidad, Tex.	28	Mar. 27	5	36.4	2
GULF OF CALIFORNIA DRAINAGE					
Colorado Basin					
Gunnison: Delta, Colo.	9	24	27	9.2	25
		29	(1)	9.4	30
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Long Tom: Monroe, Oreg.	10	Mar. 31	2	11.5	1
Santiam: Jefferson, Oreg.	13	Mar. 31	2	16.9	1
South Yamhill: Whiteson, Oreg.	38	Mar. 31	3	41.9	1
Willamette:					
Oregon City, Oreg.	12	1	4	12.6	3
Portland, Oreg.	18	23	24	18.2	24
Columbia: Vancouver, Wash.	15	1	4	16.4	3
		19	(1)	18.0	24

[1] Continued into May.
[2] Estimated.